Using computed tomography to examine dental pathology in a prairie dog

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Introduction
Dental problems are common in rodents and lagomorphs. Medical imaging is a valuable and necessary tool for such pathology, especially computed tomography (CT) is superior for diagnosing dental pathology because of its lack of superimposition and its ability to visualize hard tissue.

Signalment, history and clinical examination
A 2-year-old, neutered, male prairie dog was presented with a history of anorexia. On clinical examination, multiple spikes were found, mostly on the cheek teeth. Initially, the patient's spikes were removed; however, because the symptoms did not significantly decrease, it was referred for further examination.

Radiographic and CT examinations
The skull was radiographed laterolaterally and dorsoventrally. No significant lesions were seen near the incisors on the laterolateral view (Fig. 1). The cheek teeth did show an ill-defined occlusion and a pattern of wearing, and several roots were neither fixed deeply into the bone nor clearly delineated. A radiolucent aspect was seen at the crowns of the teeth. No lesions were seen on the dorsoventral view (Fig. 2). As CT was recommended, a 4-slice helical CT scan was performed to obtain transverse images in bone and soft tissue algorithm (Fig: 3, Fig: 4).
CT showed prominent lesions of the wearing pattern of multiple cheek teeth (Fig: 5). An abnormal position of multiple roots in the surrounding bone was detected, and at several places a radiolucent rim was surrounding the roots.

Diagnosis
Ill-defined occlusion (iatrogenic) and a pattern of wearing was the primary diagnosis, with a secondary presence of several abscesses.

Discussion
Prairie dogs have incisors that grow continuously (aradicular hypsodont), but their cheek teeth do not (radicular brachyodont), so they require different treatment for cheek teeth problems than other animals, such as rabbits, guinea pigs and chinchillas, whose cheek teeth do grow continuously.
CT showed multiple cheek teeth with prominent lesions and also an ill-defined pattern. An abnormal position of multiple roots within the surrounding bone was detected and a radiolucent rim was seen near several roots.
This prairie dog had a prominent abnormal occlusion as well as several maxillary and mandibular cheek teeth that showed a pathologic pattern of wearing. Multiple abscesses were also detected near the maxilla and mandibula.